

REMARKS

In view of the above amendments and the following remarks, reconsideration and further examination are requested.

By this amendment, claims 13-18 have been canceled and claims 19-24 have been added. Thus, claims 19-24 remain pending. Support for the new claim recitations can be found at least at: Fig. 84; column 26; column 21, line 27-30; and column 63, lines 28-29. If the Examiner requires further supporting passages, she is invited to contact the undersigned by telephone.

In light of the Examiner's requirement, formal drawings for the present application are filed herewith.

Claims 13, 14, 16, and 17 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 5,600,672 in view of Glenn. It is submitted that this rejection is improper. The present application is a reissue application of U.S. Patent No. 5,600,672. Further, the original patent was surrendered to the PTO on July 18, 2001 in the parent application of the present application. The Serial No. of the parent application is 09/244,037. Moreover, as is the case in the present application, in the parent application claim 1 of the original patent 5,600,672 has been canceled, and original claim 1 is not present in any of the currently pending reissue applications of U.S. Patent No. 5,600,672.

Claims 13-18 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 13-18 of co-pending applications nos. 09/666,012, 09/667,525, 09/669,916, 09/672,947, 09/672,946, and 09/672,948 in view of Glenn. These rejections are traversed and are believed to be inapplicable to new claims 19-24.

The claims of the present application are drawn to apparatuses and methods for transmitting and/or receiving a VSB modulated signal having information of a first data stream and a second data stream. Independent claims 19 and 20 include recitations to a transmission apparatus including a trellis encoder operable to trellis encode the second data stream to produce a trellis encoded data stream, and a modulator operable to modulate the first data stream, without being trellis encoded, to an m-level VSB modulated signal and modulate the trellis encoded data stream to an n-level VSB modulated signal, n being an integer larger than m, wherein the first data stream has synchronization

data. Independent method claims 22 and 23 include recitations of a transmission method including trellis encoding the second data stream to produce a trellis encoded data stream, modulating the first data stream, without being trellis encoded, to an m-level VSB modulated signal, and modulating the trellis encoded data stream to an n-level VSB modulated signal, n being an integer larger than m, wherein the first data stream has synchronization data.

Claims 19 and 21 include recitations to a signal receiving apparatus including a demodulator operable to demodulate the m-level VSB modulated signal to the first data stream and demodulate the n-level VSB modulated signal to a demodulated data stream, wherein the demodulated data stream is reproduced according to the synchronization data, and a trellis decoder operable to trellis decode the demodulated data stream to the second data stream. According to claims 19 and 21, in the receiving apparatus, the first data stream outputted by the demodulator has a condition that it has not been trellis encoded. Therefore, the first data stream is not trellis decoded by the trellis decoder. In contrast, the demodulator also yields a demodulated data stream, which is then trellis decoded by the trellis decoder to reproduce the second data stream. Independent method claims 22 and 24 include recitations to a receiving method including demodulating the m-level VSB modulated signal to a first data stream having synchronization data and not being trellis encoded, and demodulating the n-level VSB modulated signal to a demodulated data stream, the demodulated data stream being trellis encoded, wherein the demodulated data stream is reproduced according to the synchronization data, and trellis decoding the demodulated data stream to a second data stream.

None of the co-pending applications relied on by the Examiner claim the transmission and/or receiving apparatuses or methods claimed in the present application, including the trellis encoding/decoding of the second data stream but not the first data stream. Accordingly the combinations of those co-pending application with Glenn would not result in the inventions recited in claims 19-24 of the present application.

It is noted that the claims of co-pending application 09/672,948 have been amended such that they also recite that trellis encoding/decoding is applied for the second data stream but not the first data stream. However, claims 19, 21, 22, and 24 of the present application additionally recite the feature that the demodulated data stream (which is trellis decoded to reproduce the second data

stream) is reproduced according to the synchronization data that is included in the first data stream, and claims 20 and 23 recite that the first data stream has synchronization data based on which the second data stream is to be reproduced. The claims of co-pending application 09/672,948 do not include such features. Moreover, there is no suggestion from the claims of application 09/672,948 to include the synchronization data features recited in claims 19-24 of the present application. Accordingly, it would not have been obvious to a person having ordinary skill in the art at the time the present invention was made to modify the inventions recited in application 09/672,948 in such a manner as to result in the inventions recited in claims 19-24 of the present application.

If the Examiner intends to issue a provisional non-statutory double patenting rejection in view of application 09/672,948, then it is submitted to be necessary that the Examiner provide a prior art reference having the requisite disclosure supporting any suggested modification to the inventions recited in application 09/672,948.

Claims 15 and 18 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung in view of Glenn. This rejection is traversed and is inapplicable to new claims 19-24.

Chung discloses a multiplexed coded modulation system with unequal error protection. Please refer to Fig. 1 as an example of the system of Chung, which shows that the two signal paths each include a channel encoder (121 and 131) and a constellation mapper (122 and 132). Chung discloses that "channel encoders 121 and 131 are implemented using a simple 4D 8-state trellis encoder." Chung, column 5, lines 56-58. The trellis encoders and the trellis encoding performed by these two trellis encoders are shown in Figs. 3 and 4. Chung also discloses that "the simple 4D 8-state trellis code of Figs. 3-4 is used in both channel encoders 121 and 131." Chung, column 6, lines 23-25. Thus, the explicit disclosure of Chung is in stark contrast to the clear recitations in the present application of trellis encoding/decoding the second data stream, and performing modulation/demodulation without trellis encoding/decoding in the first data stream. Chung discloses unequal error protection, but includes trellis encoding/decoding in both paths.

The secondary reference, Glenn, which the Examiner applied in combination with Chung, does not mention trellis encoding and thus does not disclose or suggest providing trellis encoding/decoding for a second data stream and not for a first data stream. Accordingly, it would not have been obvious

to a person having ordinary skill in the art at the time the present invention was made to combine the disclosures of Chung and Glenn in such a way that the inventions of claims 19-24 would result.

Because of the recitations discussed above, claims 19-24 are not anticipated by any of the prior art of record. Also because of the recitations discussed above, it would not have been obvious to a person having ordinary skill in the art at the time the present invention was made to modify or combine any of the prior art of record, or any of the claimed inventions of the applied commonly owned applications, in such a way as to result in or otherwise render obvious the inventions recited in claims 19-24. Therefore, it is submitted that claims 19-24 are allowable.

In view of the above amendments and remarks, it is submitted that the present application is in condition for allowance. The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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